

REMARKS/ARGUMENTS

Claims 1-16 are pending. Prompt and favorable consideration and allowance of the application are earnestly solicited.

The Office Action rejects claims 1-6 and 8-16 under 35 U.S.C. § 103(a) over Dane (U.S. Pat. Pub. 2001/0010897) in view of Paesani (WIPO Pub. WO 99/08046), and rejects claim 7 under 35 U.S.C. § 103(a) over Dane in view of Paesani and further in view of Armani et al. (Fr. Pat Fr 2,650,369). These rejections are respectfully traversed.

As admitted in the Office Action, Dane does not disclose “at least one horizontal mixing chamber with a radial Venturi effect,” as recited in the independent claims of the application. The Office Action asserts that this claimed feature is disclosed in Paesani as element 44, and that it would have been obvious to one of ordinary skill in the art to modify the external body of Dane to include this feature supposedly disclosed in Paesani. In fact, element 44 of Paesani is 1) not a horizontal mixing chamber; and 2) does not provide a radial Venturi effect, as further discussed below.

Paesani discloses a multi flame-ring gas burner having a central burner head with a ring of flames (38) and an external, annular burner head with a chamber (44) and at least one ring of flames (42). The central burner head and the external burner head are separately fed by mixing the primary air with the combustible gas, consisting of two axial Venturi tubes (22 and 34). The central burner head is fed by means of a vertical axis Venturi tube (34) which is aligned to a nozzle (30) with a vertical axis. The second Venturi tube (22) of the burner is a horizontal Venturi tube, for mixing the primary air and gas for feeding the external annular burner head and the chamber (44), and is divided downstream into two conduits (24) which then bend at a right angle to form two vertical ducts (26). See Figs 1 and 3 and pages 2-3.

In Paesani, the mixing of gas and air happens in the axial Venturi tubes (22 and 34), as discussed in the background section of the present application on page 3, lines 4-16. Paesani refers to “a primary air-gas mixing device consisting of Venturi tube 22...” and “the gas which enters through the conduit 28 and leaves the nozzle 30 enters the Venturi tube 34 to draw in primary air 46...”. See page 3 lines 10-20. Therefore, because the gas and air are mixed in the Venturi tubes 22 and 34, the annular chamber (44) is not a horizontal mixing chamber as required by the independent claims of the present application.

Further, the annular chamber (44) of Paesani is not a horizontal mixing chamber with a radial Venturi effect as required by the independent claims. A radial Venturi effect is not provided by the physical geometry of the annular chamber (44) as asserted in the Office Action. The primary air-gas mixture is already formed when the fluid passes successively in the vertical ducts (26), in the annular chamber (44) and emerges through the holes (42) to burn. Paesani has no description or illustration that would provide a radial Venturi effect. Therefore, the annular chamber (44) of Paesani does not provide a radial Venturi effect as required by the independent claims 1 and 12.

Moreover, the primary Dane reference includes an axial Venturi tube (10) and an axial Venturi tube formed by the convergent duct (34) and radial annular divergent region (37) that perform primary air-gas mixing. Even if the annular chamber (44) of Paesani were somehow combined with the structure of Dane, the annular chamber (44) would still not constitute a mixing chamber because mixing of air and gas occurs in Dane in the tube (10) and duct (34).

For at least these reasons, independent claims 1 and 14, and all claims dependent therefrom, are not obvious over the applied references. Withdrawal of the rejections is respectfully requested.

Dependent claims 15 and 16 recite a duct which is positioned upstream of the horizontal mixing chamber, which duct does not contribute to the radial Venturi effect. The Office Action asserts that well (12) of Dane constitutes the recited duct upstream of the horizontal mixing chamber. However, if Dane were to be modified to include the annular chamber (44) of Paesani, the annular chamber (44) would presumably be placed in the area of annular chamber 22. Well 12 would thus not be upstream of the horizontal mixing chamber, as recited in claims 15 and 16. Accordingly, even if combined, the applied references would not render obvious claims 15 and 16.

In view of the above amendments and remarks, Applicant respectfully submits that all the claims are patentable and that the entire application is in condition for allowance. It is noted that the EPO has indicated an intention to grant the corresponding European application.

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140 under Order No. PTB-3687-114.

Angelo BETTINZOLI
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Should the Examiner believe that anything further is desirable to place the application in better condition for allowance, he is invited to contact the undersigned at the telephone number listed below. Respectfully submitted,

NIXON & VANDERHYE P.C.

By: /Paul T. Bowen/
Paul T. Bowen
Reg. No. 38,009

PTB:jck
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100